WE CLAIM

1. An apparatus comprising:

a transmitter for transmitting information towards at least a first network unit and a second network unit;

a receiver for receiving information transmitted from at least one network unit; and

a media access controller for issuing data grants; wherein at least one data grant authorizes a first network unit to transmit data at a first bit-rate during at least one time-slot and at least one other data grant authorizes a second network unit to transmit data at a second bit-rate during at least one other time-slot, whereas the second bit-rate differs from the first bit-rate.

2. The apparatus according to claim 1 wherein a data grant authorizes a network unit to transmit at least one cell during at least one time-slot.

3. The apparatus of claim 2 wherein the cells are Asynchronous Transfer Mode cells.

4. The apparatus according to claim 1 wherein the first bit-rate is much slower than the second bit-rate.

5. The apparatus of claim 1 wherein the ratio between the second bit-rate and the first bit-rate ranges between two and six.

6. The apparatus of claim 1 wherein the receiver has at least one reception path adapted to receive information bursts of at least one bit-rate.

7. The apparatus of claim 1 further adapted to receive information reflecting at least one bit-rate out of the first bit-rate and the second bit-rate.

8. The apparatus according to claim 1 further adapted to request a network unit capable of transmitting at multiple bit-rates to transmit at certain bit-rate out of said multiple bit-rates.

9. The apparatus according to claim 8 wherein the apparatus selects said certain bit-rate in response to network unit related information previously transmitted from the network unit.

10. The apparatus according to claim 8 wherein the apparatus selects said certain bit-rate in response to bit-rates of other network units that are coupled to the apparatus.

11. The apparatus according to claim 8 wherein the apparatus selects said certain bit-rate in response to bandwidth requirements.

12. The apparatus of claim 1 wherein the receiver comprises a first path adapted to receive transmissions of a first bit-rate and further comprises a second path adapted to receive transmissions of a second bit-rate.

13. A method for allocating upstream bandwidth of a shared upstream channel of an optical network, the optical network interconnecting an apparatus with at least a first network unit and a second network unit, the method comprising the stages of:

receiving requests for transmitting information towards the apparatus entity; and

issuing data grants in response to the requests; wherein at least one data grant authorizes a first network unit to transmit data at a first bit-rate during at least one time-slot and at least one other data grant authorizes a second network unit to transmit data at a second bit-rate during at least one other time-slot, whereas the second bit-rate differs from the first bit-rate.

14. The method according to claim 13 wherein a data grant authorizes a network unit to transmit at least one cell during at least one time-slot.

15. The method of claim 14 wherein the cells are Asynchronous Transfer Mode cells.

16. The method according to claim 13 wherein the first bit-rate is much slower than the second bit-rate.

17. The method according to claim 14 wherein the ratio between the second and first bit-rate ranges between two and six.

18. The method according to claim 13 further comprises a stage of receiving, at the apparatus, information from at least one network unit.

19. The method according to claim 18 further adapted to receive information reflecting at least one bit-rate out of the first bit-rate and the second bit-rate.

20. The method according to claim 13 further comprising a stage of requesting a network unit capable of transmitting at multiple bit-rates to transmit at certain bit-rate out of said multiple bit-rates.

21. The method according to claim 20 wherein the stage of requesting is preceded by a stage of selecting said certain bit-rate in response to network unit related information previously transmitted from the network unit.

22. The method according to claim 20 wherein the stage of requesting is preceded by a stage of selecting said certain bit-rate in response to bit-rates of other network units that are coupled to the apparatus.

23. The method according to claim 20 wherein the stage of requesting is preceded by a stage of selecting said certain bit-rate in response to the requests for transmitting information.

24. A computer readable medium having code embodied therein for causing an electronic device to perform the stages of:

receiving requests for transmitting information from a network unit, over an optical network, towards an apparatus; and

issuing data grants in response to at least the requests; wherein at least one data grant authorizes a first network unit to transmit data at a first bit-rate during at least one time-slot and at least one other data grant authorizes a second network unit to transmit data at a second bit-rate during at least one other time-slot, whereas the second bit-rate differs from the first bit-rate.